Message

From: Grundler, Christopher [grundler.christopher@epa.gov]
Sent: 6/9/2017 9:17:59 PM
To: Bunker, Byron [bunker.byron@epa.gov]
Subject: Fwd: Study of VW's Cheating on Diesels Examines Role of Bosch Code

The Riverside study would be worth a read by your and OECA staff. Let me know what they think

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Begin forwarded message:

From: "Phillips, Anna" <Phillips.Anna@epa.gov>
Date: June 9, 2017 at 3:54:26 PM EDT
To: "Bunker, Byron" <bunker.byron@epa.gov>, "Belser, Evan" <Belser.Evan@epa.gov>, "Cohen, Janet" <cohen.janet@epa.gov>, "Blubaugh, Jim" <Blubaugh.Jim@epa.gov>, "Haugen, David" <haugen.david@epa.gov>, "Grundler, Christopher" <grundler.christopher@epa.gov>
Subject: Study of VW's Cheating on Diesels Examines Role of Bosch Code

Bloomberg BNA

Study of VW's Cheating on Diesels Examines Role of Bosch Code

Posted June 09, 2017, 12:36 P.M. ET

By Ryan Beene

A study alleges that Robert Bosch Gmbh created the software that enabled Volkswagen AG to evade diesel emissions standards for years.

Technical documents also indicate Bosch code was used in a so-called defeat device for a Fiat Chrysler Automobiles NV model, according to a year-long study by researchers at the University of California, San Diego and Ruhr-Universitat Bochum in Germany. That software set one mode for when a vehicle is being tested—but then allowed tailpipe pollution to spike in real-world driving conditions.

"We find strong evidence that both defeat devices were created by Bosch and then enabled by Volkswagen and Fiat for their respective vehicles," the study said, citing technical documents.

In a statement, Bosch declined to comment on the study, citing "the sensitive legal nature of these matters," adding that it would "not comment further concerning matters under investigation and in litigation." Bosch has previously rejected as "wild and unfounded" claims from vehicle owners that its employees conspired with VW to conceal defeat-device software.

The authors of the study, "How They Did It: An Analysis of Emission Defeat Devices in Modern Automobiles," reached their conclusions by analyzing technical documents bearing Bosch copyright notices, which were posted on a VW portal maintained for repair shops and websites for enthusiasts who alter their engine's software. The authors acknowledged that the documents were not provided or verified by Bosch and that automakers ultimately decide how to use the pollution-control software in their vehicles.

"Since we did not obtain the function sheets directly" from Bosch, the researchers wrote in their study, released May 22, "we cannot be absolutely certain of their authenticity."

Bosch, the world's largest auto-parts supplier, provides engine-control software to manage diesel emissions systems, offering computer precision to fine-tune those historically dirtier engines.

The company has had varying degrees of involvement in engine development work done by its automaker customers, ranging from simply providing software to hands-on technical collaboration, according to Daniel Carder, director of West Virginia University's Center for Alternative Fuels Engines and Emissions. Carder, who was part of the team that first identified VW's diesel cheating, said Bosch's software allowed engineers to tune engine performance with far more precision than previously possible.

Bloomberg News reported in September that the U.S. Justice Department was widening its criminal investigation into VW to probe whether Bosch conspired with the carmaker to evade U.S. pollution tests. Bosch declined to comment at the time.

VW has admitted to installing some 11 million diesel vehicles worldwide with defeat device software that could limit pollution during lab tests while exceeding legal limits on the road. Fiat Chrysler was accused by the Justice Department last month of using defeat devices in Jeep SUVs and Ram pickups, which use Bosch software. Fiat Chrysler denied wrongdoing and says it will defend itself vigorously against the allegation that it sought to cheat.

Bosch was not named as a defendant in the complaint. Fiat Chrysler "frequently engaged in discussions with Bosch regarding calibrations," of the software, the Justice Department said in the complaint.

While the VW and Fiat Chrysler defeat devices analyzed in the study are different from one another, they both allow vehicles to limit nitrogen oxide emissions during laboratory tests while allowing the vehicles to emit higher levels of tailpipe pollution in real-world driving, according to the study. The Bosch-copyrighted documents illustrate how the defeat devices could spot telltale signs of an emissions test, according to Kirill Levchenko, a UC-San Diego computer scientist and an author of the study.

"It's a diagram of a defeat device," Levchenko said, referring to the Bosch schematic design.

The study was supported by the European Research Council and by the U.S. National Science Foundation. It was prepared for an Institute of Electrical and Electronics Engineers Symposium on Security and Privacy in San Jose last month.

Widening Investigation

The study's findings add to scrutiny already surrounding the extent of the Stuttgart, Germany-based Bosch's involvement in the suspect diesel systems. Bosch has been named as a co-defendant in class-action lawsuits filed by owners of diesel vehicles made by VW, Fiat Chrysler, Daimler AG's Mercedes-Benz and, most recently, General Motors Co. In January, Bosch agreed to a $327.5 million settlement with VW owners; it admitted no wrongdoing.

U.S. vehicle owners accused Bosch of conspiring with the automaker to develop and conceal the defeat device software. In 2008, Bosch also asked VW to shield it from legal liability stemming from

the use of its software, lawyers representing owners of VW diesels claimed in court filings last September. Bosch declined to comment on the letter at the time.

The Bosch-copyrighted schematics, reproduced in the study, diagram how the VW vehicles detected when they were being tested and limited pollution emissions to permissible levels. When the cars weren't being tested, they released the smog-forming pollutants at up to 40 times the permitted levels, according to the U.S. Environmental Protection Agency.

Separately, the researchers say they discovered code on a diesel Fiat 500x crossover that is sold in Europe but not the U.S. that "amounts to a defeat device." In the Bosch-copyrighted documents, one pollution-control path is called "real driving" and the other is labeled "homologation," a term used for the process of certifying that a product meets regulatory standards.

The testing mode directs the storage catalyst to limit nitrogen oxide emissions more aggressively than in the "real driving" mode. The stricter pollution controls are suspended after a little more than 26 minutes, which is the length of many emissions tests, Levchenko said.

A Fiat Chrysler spokesman declined to comment, and referred to written comments the company delivered last fall for a European Parliament committee hearing into allegations that the 500x deactivated emissions controls after 22 minutes.

"Our vehicles do not detect that they are being tested," the company said at the time. "They also do not deactivate the emission control systems after 22 minutes after cranking, contrary to allegations."

Regulators in Italy and Germany have been trading blows in a months-long dispute over the existence of defeat devices in Fiat Chrysler vehicles, including the 500x. Germany has accused the company of using defeat devices while Italian regulators say their testing reveals no such cheating.

The spat escalated last month when the European Commission opened a proceeding into whether the Italian regulators properly granted emissions approval to the Fiat Chrysler diesels.

—With assistance from Gabrielle Coppola.